

382/554 PLUSPAT(C) QUESTEL-ORBIT- image

CPIM (C) JPO

PN - JP58206080 A 19831201 [JP58206080]

TI - (A) AIR CELL

PA - (A) TOKYO SHIBAURA ELECTRIC CO

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AP - JP8734982 19820525 [1982JP-0087349]

PR - JP8734982 19820525 [1982JP-0087349]

IC - (A) H01M-012/06

EC - H01M-012/06

DT - Basic

STG - (A) Doc. Laid open to publ. Inspec.

AB - PURPOSE: To obtain an air cell whose discharge capacity is not degraded even if it is stored for a long period of time by sealing an air hole using a sealing material in which a metal, nonmetal or oxide or alloy layer is formed on the surface of a resin coat.

- CONSTITUTION: The bottom of a positive electrode can 7 in which an air hole is bored is covered with a sealing material and the inner part of a cell is sealed. The sealing material is comprised by forming a coat such as a metal on the surface of a resin coat by a method such as a deposition method. The material of the resin coat is not especially restricted, but it is desirable that the material is one with excellent alkali resistance and water repellency and with the small permeability of various gases. Polytetrafluoroethylene is recommended as the material. Zr and the like are recommended as metals. Te and the like are recommended as nonmetals. ZnO and the like are recommended as metal or nonmetal oxides. Stainless steel and the like are recommended as alloys. A layer made of such metals is normally assigned to be 1. μ m thick.

- COPYRIGHT: (C)1983,JPO&Japio

(83) TR.

JA 206,080
UNEXAMINED
ENGLISH DIGEST

Japanese Unexamined Patent Application : 58-206080, December 1, 1983

Title : Air Cell

Application : May 25, 1982

Sr : 57-87349

UNION CARBIDE CORP.
BATTERY PRODUCTS DIV.
TECHNOLOGY LAB.
TECH. INFO. CTR.

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JUN 7 1984

It relates to a seal structure for use with air cathode.

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An air cell is usually composed of Zn neg, alkaline electrolyte and a porous cathode such as active acarbon. The cathode has an air inlet, which is covered with a sheet of polyethylene or polypropylene film to prevent drying of cell and entry of carbon dioxide during storage. The protection is, however, not sufficient to protect the cell for prolonged storage.

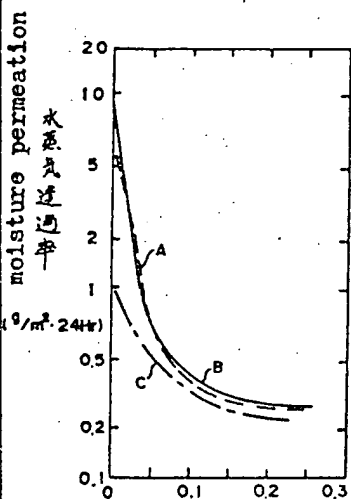
In this invention, plastic film covered with a thin layer of metal, non-metal, their oxides, or alloy is used to cover the air inlet of air cell. A 0.01 - 1 μm thickness is applied on the film by a method such as vapor deposition.

Example: Polyethylene (PE) (30 μm thick)A, polypropylene (PP) (20 μm)B and PTFE(10 μm)C were vapor-deposited with Al or Al_2O_3 , respectively, and tested for permeation rate of water vapor and oxygen as shown in Fig.1 and 2.

Claim: Air cell, in which air inlet is covered with plastic film that has been deposited with metal, non-metal, their oxides or alloys. In said cell, the thickness of the deposit is 0.01 - 1 μm thick.

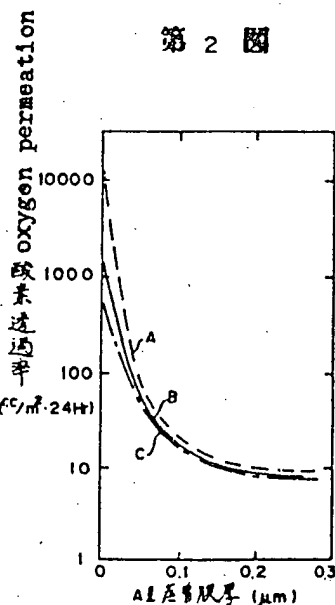
REFERENCE

第 1 図

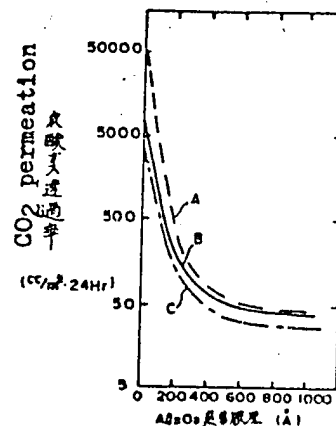
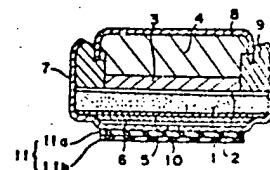
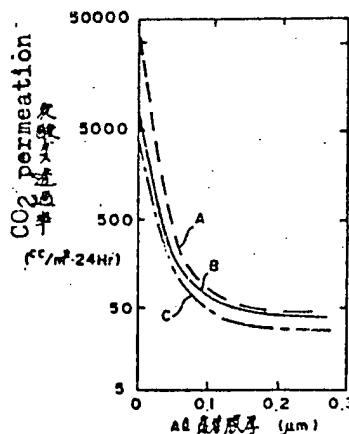


Al deposit thickness, μm

第 2 図



第 3 図



Al_2O_3 thick, \AA

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